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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/772,918	02/04/2004	Gilles Robert	015258-062300US	5221

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EXAMINER

CANTELMO, GREGG

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 12/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/772,918

Applicant(s)

ROBERT, GILLES

Examiner

Gregg Cantelmo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☒ Claim(s) 1-9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |  |
|---|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>2/4/04</u> | 6) <input type="checkbox"/> Other: ____  |

## **DETAILED ACTION**

### ***Preliminary Amendment***

1. The preliminary amendment received February 4, 2004 has been entered.

### ***Priority***

2. Acknowledgment is made of applicant's claim for foreign priority based on an application filed with the European Patent Office on February 18, 2003. It is noted, however, that applicant has not filed a certified copy of the European application as required by 35 U.S.C. 119(b).

### ***Information Disclosure Statement***

3. The information disclosure statement filed February 4, 2004 has been placed in the application file and the information referred to therein has been considered as to the merits.

### ***Drawings***

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the afterburner of claim 1 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet,

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and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

5. The abstract of the disclosure is objected to because it exceeds 150 words. A 150-word limit has been imposed by the USPTO to conform to PCT applications and Pre-Grant Publications. See 37 CFR 1.72 and rule changes applied thereto. Correction is required. See MPEP § 608.01(b).

6. The disclosure is objected to because of the following informalities: the term battery appears to be applied to the fuel cells. Typically these terms are not equivalently interchangeable with one another. These terms are rather understood to be directed to particular forms of electrochemical systems. Use of the term battery then becomes somewhat misleading since it is suggestive of both a fuel cell and a battery in the context of the claims. Applicant is advised to replace the term battery in both the claims and specification with an alternative term such as "Power Source" or "Electrochemical Power source" to overcome this objection. Appropriate correction is required. Appropriate correction is required.

### ***Claim Objections***

7. Claims 1-9 are objected to because of the following informalities:
- a. The term battery appears to be applied to the fuel cells. Typically these terms are not equivalently interchangeable with one another. These terms are rather understood to be directed to particular forms of electrochemical systems. Use of the term battery then becomes somewhat misleading since it is suggestive of both a fuel cell and a battery in the context of the claims. Applicant is advised to replace the term battery in both the claims and specification with an alternative term such as "Power Source" or "Electrochemical Power source" to overcome this objection. Appropriate correction is required. Furthermore the claims are replete with grammatical errors (see claim 3 for example wherein the language in the claim appears to have numerous grammar errors therein).
  - b. The units "2,5" and "3,5" cm in claim 6 should be "2.5 cm and 3.5 cm". Furthermore the range should provide units to each value of the range. So the range "between 2 and 3 cm" should be --between 2 cm and 3cm--.
  - c. The temperature of claim 8 should be "100 K" without the degree symbol.

### ***Claim Interpretation***

8. The claims recite preferable limitations. The term "preferably" has been interpreted such that the preferred limitations are not absolute requirements but only preferential requirements. Therefore, this term is construed to be optionally present in the claims.

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9. Reference characters corresponding to elements recited in the detailed description and the drawings may be used in conjunction with the recitation of the same element or group of elements in the claims. The reference characters, however, should be enclosed within parentheses so as to avoid confusion with other numbers or characters which may appear in the claims. The use of reference characters is to be considered as having no effect on the scope of the claims. See MPEP § 608.01 (m).

***Claim Rejections - 35 USC § 101***

10. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 9 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- a. Claim 1, line 13, the term "miniaturised" in claim 1 is a relative term which renders the claim indefinite. The term "miniaturised" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. There is no clear comparison between the instant claimed fuel cell and prior art fuel cells which would reasonably describe the extent to which the instant invention is deemed to be miniaturized. Furthermore considering the defined upper limit of the volume of the fuel cells  $10^{-3}$  m<sup>3</sup>, the volumetric upper limit is not necessarily understood as being representative of miniature-sized dimensions. Applicant is advised to delete the term "miniaturised" from the claims to overcome this rejection;
- b. Claim 1, line 4 recites a range within a range which renders the claim indefinite since it is unclear as to what volume is the definitive and limiting volume;
- c. Claim 1, line 12 recites "which is stored in this" but fails to clearly define what is stored in the tank nor what the term "this" is meant to be associated with;
- d. Claim 1, line 13, the term "environmental pressure" in claim 1 is a relative term which renders the claim indefinite. The term "environmental pressure" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

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- e. Claim 1, line 15 recites "controlled valves" but does not define what the term controlled encompasses. Applicant is advised to replace the term controlled with the term control;
- f. Claim 1 recites that the quantity ratio of the ion conducting and electron conducting components is "so designed" to impart a particular claimed function. However the claim is indefinite since it fails to adequately define how the ratio is designed;
- g. Claim 1 recites the limitation "the environment" in line 20. There is insufficient antecedent basis for this limitation in the claim.
- h. Claim 2 recites the term "ceroxide" however it is unclear what "ceroxide" is. The only recitation of the term "ceroxide" is in claim 2 and not in the remainder of the disclosure. It may be that this term should be "cerium oxide" (see the last line of page 6). Clarification is requested;
- i. The term "micro-technical methods" in claim 2 is a relative term which renders the claim indefinite. The term "micro-technical methods" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. There is no clear definition of what methods were clear and definitive micro-technical methods. Since the claimed term is not reasonably and clearly defined, the methods recited in claim 2 is vague and indefinite;



j. The term "negative source of heat" in claim 4 is a relative term which renders the claim indefinite. The term "negative source of heat" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear as to what a negative source refers to whether it be a heat source or heat sink or whether it does not provide any heat at all;

k. Claim 7 is indefinite. Claim 7 recites "feeding to the reactants (40, 50) into the fuel cells (2) is maintained at a low level, so that in this idling state, the temperature in the cells remains high, namely so high that a transfer from the idling state into a energy-delivering normal operating state is possible within a pre-given length of time, wherein this length of time is 10 minutes for example, preferably less than 1 minute. It is unclear as to what the particular bounds of the claim are since the language used recites preferences, possibilities and examples. It does not present a particular and clearly defined claimed method;

l. Regarding claim 7, the phrase "for example" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d);

m. The terms "high and high temperature" in claim 7 are relative terms which renders the claim indefinite. The terms are not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope

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of the invention. It is unclear as to what temperatures are recognized as being high temperatures;

n. Claim 9 provides for the use of the battery, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced;

o. The claims are replete with 112 2<sup>nd</sup> paragraph issues. Applicant is advised to thoroughly and carefully review all claim amendments to eliminate any and all 112 2<sup>nd</sup> issues.

### ***Conclusion***

2. Due to the fact that the claims are replete with 112 2<sup>nd</sup> paragraph issues presented above, no patentability determination can be made at this point in prosecution.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregg Cantelmo whose telephone number is 571-272-1283. The examiner can normally be reached on Monday to Thursday, 8:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



November 30, 2006

gc

Gregg Cantelmo  
Primary Examiner  
Art Unit 1745